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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/557,920

11/22/2005

Olivier Simon

SIMON13

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EXAMINER

KEYS, ROSALYND ANN

ART UNIT

PAPER NUMBER

1621

MAIL DATE

DELIVERY MODE

06/20/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/557,920

Applicant(s)

SIMON ET AL.

Examiner

Rosalynd Keys

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☒ Claim(s) 4-26 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 November 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>11/22/05</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Status of Claims

1. Claims 1-26 are pending.
Claims 1-3 are rejected.
Claims 4-26 are objected.

Priority

2. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

3. The information disclosure statement (IDS) submitted on November 22, 2005 has been considered by the examiner.

Specification

4. The disclosure is objected to because of the following informalities: the specification does not contain a brief description of the drawings.
Appropriate correction is required.

Claim Objections

5. Claims 4-26 are objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim cannot depend from any other multiple dependent claim. See MPEP § 608.01(n). Accordingly, the claims 4-26 have not been further treated on the merits.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

9. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Stansbury, Jr. et al. (US 3,130,234) in view of van Dijk (US 2,081,719).

Stansbury, Jr. et al. teach extraction of glyoxal tetraethyl acetal (1,1,2,2-

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tetraethoxyethane) with an organic solvent such as petroleum ether and ethers such as ethyl ether and isopropyl ether according to known extraction procedures (see entire disclosure, in particular column 1, line 62 to column 2, line 1).

Stansbury, Jr. et al. differ from the instant invention in that Stansbury et al. do not specifically teach the use of countercurrentwise extraction.

Van Dijck teaches that it is known to extract certain components from liquids by extraction with a solvent and that such extraction may be carried out counter-currently (see entire disclosure, in particular column 1, lines 4-7). Van Dijck further teaches that the most favorable results are obtained by treating the liquid mixture to be separated with a sufficiently selective solvent in counter-current (see column 1, lines 15-19).

One having ordinary skill in the art at the time the invention was made would have found it obvious to extract the glyoxal tetraethyl acetal of Stansbury et al. with the organic solvent in a countercurrent manner, as taught by van Dijck, since van Dijck teaches that such method of extraction is known and the skilled artisan would have been motivated to carry out the extraction in a countercurrent manner since van Dijck further teaches that the most favorable results are obtained by treating the liquid mixture to be separated with a sufficiently selective solvent in counter-current.

10. Claims 1-3 are rejected under 35 U.S.C. 103(a) as being unpatentable Babler (US 5,197,127) in view of Wessendorf et al. (US 4,065,506).

Babler teaches isolation of glyoxal bis(diethyl acetal), a glyoxal diacetal of formula (I), by extraction with methylene chloride (see column 1, lines 15-30). Babler inherently teaches the presence of a glyoxal monoacetal of formula (II), since Babler prepares the glyoxal bis(diethyl acetal) in the same manner as the claimed glyoxal diacetal of formula (I), see column 2, line 40 to column 3, line 13).

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Babler differ from the instant claims in that they do not teach using countercurrentwise liquid-liquid extraction or the use of alkanes or aromatic hydrocarbons as the organic solvent.

Wessendorf et al. teach a process for refining a glyoxal, specifically glyoxal semiacetal by continuous counterflow extraction using solvents, which are insoluble or sparingly soluble in water including halogenated hydrocarbons such as methylene chloride, aromatic hydrocarbons such as toluene and cycloaliphatic hydrocarbons such as cyclohexane (see entire disclosure, in particular column 3, lines 3 to 64).

One having ordinary skill in the art at the time the invention was made would have found it obvious to utilize the method and organic solvents of Wessendorf et al. to isolate the glyoxal bis(diethyl acetal) of Babler, since Wessendorf et al. deal with a similar problem as Babler using a similar method, i.e. isolation of a glyoxal using extraction with an organic solvent, and Wessendorf et al. have shown that aromatic hydrocarbons and cycloaliphatic hydrocarbons are interchangeable with methylene chloride for extracting a glyoxal.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Purves (US 2,194,405) teaches isolation of glyoxal tetramethyl acetal using prolonged extraction with a low boiling organic solvent, immiscible, or nearly so, with water, e.g. diethyl ether (see entire disclosure, in particular column 3, line 67 to column 4, line 38).

McDowell et al. (US 2,321,094) teach an efficient method of making tetracetals of glyoxal by heating glyoxal and glycol mono-ether, preferably in the presence of a small amount of an acidic catalyst (see entire disclosure, in particular column 1, line 44 to column 2, line 3). It is also taught that because of the difficulty in handling and storing monomeric glyoxal, the glyoxal is preferably added in aqueous solution where it exists either in the form of a hydrate or a

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hydrated polymer. Thus, the substances employed in their invention to react with glycol monoethers to form glyoxal tetra-acetals consist of aqueous glyoxal, as well as monomeric glyoxal, its hydrates, polymers, and hydrated polymers (see column 2, lines 3-15).

McCain, Jr. et al. teach purification of aqueous glyoxal solutions by the continuous liquid-liquid countercurrent extraction with an organic solvent solution (see entire disclosure, in particular column 1, line 44 to column 3, line 45).

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rosalyn Keys whose telephone number is 571-272-0639. The examiner can normally be reached on M, W & F 5:30-7:30 am & 1-5 pm; T & Th 5:30 am-4 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richter Johann can be reached on 571-272-0646. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Rosalyn Keys
Primary Examiner
Art Unit 1621

June 14, 2007